Header Records

The header maintenance facility defines various global settings for a command processor. These definitions are collectively referred to as a header. Seven header maintenance screens are provided for creating and modifying headers. Header settings for a command processor can be updated at any stage of development (see the following section). After the settings have been modified, the status of a command processor is always set to Header (see also Current Status).

Below is information on:

- Create New Processor
- Modify Header - General Explanations
- Keyword Runtime Options - Header 1
- Keyword Editor Options - Header 2
- Miscellaneous Options - Header 3
- Command Data Handling - Header 4
- Runtime Error Handling - Header 5
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Create New Processor

To create a new command processor

- On the Processor Source Maintenance menu, enter Function Code **N** (Create New Processor),
  the name of the command processor to be created and
  the name of the Natural library in which the command processor is to be later cataloged.
- Press ENTER.
  The first header maintenance screen is displayed.

The first header maintenance screen and the following ones are filled with default values that can be edited.

Modify Header - General Explanations

The Modify Header function is used to maintain an existing header; that is, to modify the various header settings for a given command processor.

To modify an existing header

1. On the Processor Source Maintenance menu, enter Function Code **H** (Modify Header),
   the name of the corresponding command processor and
   the name of the library into which this command processor has been cataloged.
2. Press ENTER.
   The first header maintenance screen is displayed.
3. Modify any input field in the header maintenance screens described below.
4. Press ENTER to confirm modifications.

Seven different screens are available for the definition and maintenance of a processor header (for the definition of a header, see the previous section).

To navigate between the header maintenance screens

- Use PF8 (forward) or PF7 (backward).

Each of the screens contains the following information:

Name	The name of the command processor.
Library	The name of the library into which the resulting command processor object is to be placed after being cataloged.
DBID, FNR	The database ID and file in which the specified library is located.
Created by	The user ID of the Natural user who initialized this command processor.
Date	The date the command processor was initially created.
Current Status	The command processor status: Init — The command processor has been initialized. Header — The header for the command processor has been created/modified. Keysave — Keywords have been defined and saved. Keystow — Keywords have been checked and stowed. Function — Keyword combinations have been defined. Action — Runtime actions have been defined. Object — An object form of the command processor has been created. Frozen — The command processor has been frozen. Copied — The command processor has been copied. Error — An error has been detected.

Keyword Runtime Options - Header 1

When you select the Modify Header function (as described above), the "Processor Header Maintenance 1" screen is displayed:

```
16:40:19                ***** NATURAL SYSNCP UTILITY *****          2000-05-04
User SAG                - Processor Header Maintenance 1 -

Modify Processor            Name SAGTEST  Library SYSNCP   DBID 10    FNR 32
Created by SAG      Date 2000-04-29                     Current Status Init

Keyword Runtime Options:
------------------------
   First  Entry used as ....... Action__________
   Second Entry used as ....... Object__________
   Third  Entry used as ....... Addition________

   Minimum Length ............. _1
   Maximum Length ............. 16
   Dynamic Length Adjustment .. -

   Keyword Sequence ........... 123_____
   Alternative Sequence ....... _________
   Local/Global Sequence ...... LG______

Processor Header with name SAGTEST for library SYSNCP has been added.
Command ===>
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help  Cmd   Exit  Last  List  Flip  -     +                       Canc
```


Various attributes which are to apply for the keywords defined for the command processor are entered on this screen.

Field	Explanation
First Entry used as	A descriptive text which is to be associated with all keywords which are entered as the first entry (entry type 1) when defining a keyword sequence. For example, if the first keyword of a keyword sequence is to represent the action to be performed (DISPLAY, DELETE, etc.), the descriptive text "Action" could be entered in this field. The first four characters of the text entered in this field appear under the column heading Use in the Keyword Editor as described in the section Keyword Maintenance.
Second Entry used as	A descriptive text which is to be associated with all keywords which are entered as the second entry (entry type 2) when defining a keyword sequence. If, for example, the second keyword of a keyword sequence is to represent the object to be used (DOCUMENT, FILE, etc.), the descriptive text "Object" could be entered in this field. The first four characters of the text entered in this field appear under the column heading Use in the Keyword Editor as described in the section Keyword Maintenance.
Third Entry used as	A descriptive text (TITLE, PARAGRAPH, etc.) which is to be associated with all keywords which are entered as the third entry (entry type 3) when defining a keyword sequence. The first four characters of the text entered in this field appear under the column heading Use in the Keyword Editor as described in the section Keyword Maintenance.
Minimum Length	The minimum length permitted when defining a keyword. Valid values are 1 - 16 characters. The default is one character.
Maximum Length	The maximum length permitted when defining a keyword. Valid values are 1 - 16 characters. The default is 16 characters.
Dynamic Length Adjustment	The following values are permitted: + At runtime, each keyword must be entered in its entirety. - At runtime, each keyword can be abbreviated provided that it retains uniqueness with respect to other keywords. S The number of characters which must be entered for a given keyword is to be specified during keyword definition in the ML field of the Keyword Editor as described in the section Keyword Maintenance.
Keyword Sequence	The sequence in which keyword entries are to be processed at runtime. Possible values are 1, 2, 3 and P (for parameter indicator); the default sequence is 12, which means first the first keyword entry and then the second keyword entry. See also the field E as described in the section Keyword Maintenance. **Note:** A maximum of four entries can be specified; the field is eight characters long to permit expansion at a later release level.
Alternative Sequence	An alternative sequence in which keywords are to be processed at runtime in the event that the default sequence (specified above) results in an error during runtime.

Field	Explanation
Local/Global Sequence	This option specifies the order of command validation to be performed at runtime. Possible values are: L Command is to be validated as a local command. G Command is to be validated as a global command. The default validation sequence is LG, which means that the command is to be validated first as a local command and then (if necessary) as a global one.

Keyword Editor Options - Header 2

Further keyword attributes can be entered on the "Processor Header Maintenance 2" screen:

Field	Explanation
Header 1 for User Text	These two fields are used to enter a descriptive text which appears in the Keyword Editor above the column reserved for user text. This text is also output during runtime when the TEXT option is specified with the PROCESS COMMAND statement as described in the Natural Statements documentation.
Header 2 for User Text	
Prefix Character 1	This field and the next three are used to attach a hexadecimal prefix to keywords. This enables the processing of internal keywords which cannot be represented by a normal keyboard. When the command processor is cataloged, all prefix characters in keywords are replaced by the hexadecimal values specified. If a non-blank character is entered in one of the Prefix Character fields, the specified character is replaced by the hexadecimal value specified in the Hexadecimal Replacement field.
Hex. Replacement 1	The value specified in this field replaces the character specified in the field Prefix Character and is used as a prefix for a keyword at runtime.
Prefix Character 2	See above Prefix Character 1.
Hex. Replacement 2	See above Hex. Replacement 1.
Keywords in Upper Case	This option specifies whether keywords are to be translated to upper case in the Keyword Editor and the application: Y Keywords entered in the Keyword Editor are automatically converted to upper case. In the application, end-users can enter the keywords in upper or lower case. N Keywords entered in the Keyword Editor are not converted to upper case. In the application, end-users must enter the keywords **exactly** as they appear in the Keyword Editor.
Unique Keywords	This option specifies whether keywords within the processor must be unique. Y Each keyword defined must be unique within this processor, regardless of its type. N Each keyword defined for a given keyword type (1, 2, 3 or P) must be unique.

Miscellaneous Options - Header 3

Miscellaneous options can be entered on the "Processor Header Maintenance 3" screen:

Field	Explanation
Invoke Action Editor	This option specifies whether the Runtime Action Editor is to be activated from the Function Editor (see the sections Runtime Action Editor and Define Functions). Y The Runtime Action Editor is invoked whenever a valid keyword combination is defined in the Function Editor. N The Runtime Action Editor is suppressed in the Function Editor. **Note:** If you use the user exit NCP-REDM, you should set this option to Y; otherwise, invalid runtime action values cannot be detected in time and can lead to runtime errors.
Catalog User Texts	This option specifies whether user texts are to be cataloged with the command processor. Y Text portions of the edit line (Keyword Editor; see the section Define Keywords) and the user text portion of the action line (Runtime Action Editor) are bound to the associated keyword or function when the command processor is cataloged. This text can then be read at runtime using the TEXT option of the PROCESS COMMAND statement. N Texts are not cataloged with the command processor and cannot be read at runtime.
Security Prefetch	This option specifies whether security checking is to be performed when the command processor is initially invoked during runtime or at each command evaluation. Y If Natural Security is installed, security checking is performed for all keywords when the processor is invoked. N If Natural Security is installed, security checking is performed with the evaluation of each keyword. If option Y is selected, security checking is performed only once for all keywords when the command processor is invoked. Since the checking procedure takes time, evaluation of the first command is comparatively slow at runtime, while the evaluation of all remaining commands is comparatively fast. Conversely, if option N is selected, the evaluation time for each command is always the same because security is checked for each keyword individually before it is evaluated.
Command Log Size	Commands processed at runtime can be stored in a command log area by the command processor. Specify in the input field the number of KBs storage space allocated to command logging: 0 No storage space is allocated to command logging. Command logging is inactive. 1 1 KB of storage space is allocated to command logging. Command logging is active.

Field	Explanation
Implicit Keyword Entry	This option specifies whether a keyword of type 1 is to be retained as an implicit keyword for all subsequent commands. 1 If a command is entered which only contains a keyword of type 2, the command processor assumes the most recently entered keyword of type 1 as implicit keyword. N Option is disabled.
Command Delimiter	This option specifies the character used to separate commands if more than one command is specified in the command line. At runtime, only the first command will be executed. For example: DISPLAY CUSTOMER; MODIFY CUSTOMER; PRINT.
PF-Key may be Command	This option specifies whether commands can be allocated to PF keys: if the command processor receives at runtime a command line which contains all blanks, it checks if a PF key has been pressed by the user. Possible values are: A The identifier for this PF key (system variable *PF-NAME) is used as the command. K The content of the *PF-KEY system variable is used as the command. Y If *PF-NAME is empty, the content of the *PF-KEY system variable is used instead. N PF keys cannot be used as command, Natural error NAT6913 is issued with message "Command line not accepted". For more information on the system variables *PF-NAME and *PF-KEY see the Natural Programming Reference documentation.

Command Data Handling - Header 4

The attributes to be entered on the "Processor Header Maintenance 4" screen specify how command data are handled for a function; command data are optional.

Options are:

Field	Explanation
Data Delimiter	Specifies the character to be used to precede data. Default data delimiter is "#". Example: ADD CUSTOMER #123
Data Allowed	Specifies if data input is allowed at runtime. N A runtime error occurs if data is found. D Data is dropped if present. S Data is placed at the top of the Natural stack. No verification is performed. Y Data is checked and keyword entries of type P (parameter indicator) are evaluated. Example for Y: DISPLAY CUSTOMER NAME=SMITH
More than one Item Allowed	Only applies if the option Data Allowed is set to Y. Specifies whether more than one data string is permitted. N A runtime error occurs if more than one data string is found. D All data after the first data string are dropped. Y More than one data string is permitted. Example: ADD ARTICLE #111 #222 As long as uniqueness is guaranteed, the data delimiter can be omitted. Example: ADD ARTICLE 123
Maximum Length of one Item	Only applies if the option Data Allowed is set to Y. Specifies the maximum number of characters allowed for a data string. If the specified maximum is exceeded, a runtime error occurs. Valid range: 1 - 99.
Item Must be Numeric	Only applies if the option Data Allowed is set to Y. Specifies whether each data value must be an integer value. Y Data input must be a positive integer value. If not, a runtime error occurs. N Data can be of any type.
Put to Top of Stack	Only applies if the option Data Allowed is set to Y. Specifies where data is to be placed. Y Data is placed at the top of the Natural stack. 1-9 Data is placed in the *n*th occurrence of the DDM field RESULT-FIELD. If the occurrence has already been filled as a result of a runtime action, it is overwritten.
If Error, Drop all Data	Only applies if the option Data Allowed is set to Y or N. Specifies the reaction to a data evaluation error: Y If an error occurs during evaluation of the data, data is discarded and processing continues. N If an error occurs during data evaluation, control is given to the error handler as described below.

Runtime Error Handling - Header 5

The attributes to be entered on the "Processor Header Maintenance 5" screen specify how to handle runtime errors:

Field	Explanation
General Error Program	The name of the program which is to receive control when an error is detected during runtime processing by the command processor. The Natural stack contains the following information when this program is invoked: Error Number (N4) Line Number (N4) Status (A1) Program Name (A8) Level (N2) If no error program and no specific error handling is specified (see below), the program with the name as contained in the Natural system variable *ERROR-TA is invoked; otherwise, a Natural system error message is issued.
Keyword not found	Indicates whether an action has been specified that is to be performed if a keyword could not be found.
Keyword missing	Indicates whether an action has been specified that is to be performed if the keyword type is missing.
Keyword Sequence Error	Indicates whether an action has been specified that is to be performed in the case of a keyword sequence error.
Command not defined	Indicates whether an action has been specified that is to be performed in the case of an undefined command.
Data disallowed	Indicates whether an action has been specified that is to be performed in the case of disallowed data.
Data Format/Length Error	Indicates whether an action has been specified that is to be performed in the case of a format/length error.
General Security Error	Indicates whether an action has been specified that is to be performed if an error is detected during a general security check.
Keyword Security Error	Indicates whether an action has been specified that is to be performed if an error is detected during a keyword security check.
Command Security Error	Indicates whether an action has been specified that is to be performed if an error is detected during a command security check.

Statistics - Header 6

The "Processor Header Maintenance 6" screen contains only output fields which report statistical data about the keywords specified for a command processor.

The following statistical information is provided:

Field	Explanation
Entry *n* Keywords	The number of keywords of type *n* defined in the command processor (not including synonyms).
Entry *n* Keywords + Synonyms	The sum of keywords of type *n* and their assigned synonyms.
Highest IKN for Entry *n*	The largest Internal Keyword Number for the keyword of type *n*.
Possible Combinations	The number of possible combinations for keywords defined.
Cataloged Functions	The number of keyword combinations currently cataloged.

Status - Header 7

The "Processor Header Maintenance 7" screen contains only output fields which report the time and the date when parts of the command processor were executed or modified.

